

## ABSTRACT OF THE DISCLOSURE

A method for generating a premodulation-filtered modulation waveform having a real part and an imaginary part for transmitting octal symbols uses a reduced lookup table. Successive octal symbols, each comprising three information bits, are input to a logic unit. The logic unit forms a first derived bit by combining the first and third information bits and a second derived bit by combining the second and third information bits. The first and second information bits, along with the first and second derived bits, are delayed in respective L-bit shift registers. The bit sequences in the L-bit shift registers are used to determine a corresponding filtered waveform segment for each bit sequence. The waveform segments corresponding to the delayed first information bits and the delayed first derived bits are combined to obtain a segment of said imaginary waveform part. The waveform segments corresponding to the delayed second information bits and delayed second derived bits are combined to obtain a segment of said real waveform part.